SHVARTS, D.M.; FORTNOVA, V.V.

Spectrum analysis of tin of high purity using preliminary enrichment.
Zav. lab. 24 no. 6:731-734 '58. (MIRA 11:7)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut "Gipronikel."

(Tin--Spectra)

PORTNOY, A A

CR

USSR/Miscellaneous-Metallurgy

Card 1/1

Author : Portnoi, A. A.

Title : Fight against the adhesion of aluminum melts to the profiling surfaces of presses

Periodical : Lit. Proizv. 1, page 32, Jan-Feb 1954

Abstract : Two methods practiced by the Ministry of Machine Construction in combating the sticking of aluminum smelts to the iron of the casting forms are described. One method consists in adding 1.5 - 2% iron to the smelt but only in cases when the chemical composition of the castings is not controlled. The second and more effective method is the electro-spark coating of the mold surfaces with a solid alloy. Two references.

Institution: ....

Submitted : ....

PORTNOY, A.A.

Preventing the sticking of aluminum alloy to form surfaces of press molds. Lit.proizv. no.1:32 Ja-F '54. (MLRA 7:1)
(Die-casting)

PORTNOY, A.G.

Some results of using standard costs of manufacturing. Kons. i ov. prom. 18 no.11:40-41 N '63. (MIRA 16:12)

1. TSentral'nyy nauchno-issledovatel'skiy institut konservnoy i ovoshchesushil'noy promyshlennosti.

PORTNOY, A.L.

PORTNOY, A.L.

Restoring pressure casting dies. Lit.proizv. no.1:28 Ja '55.
(Die casting) (MLRA 8:3)

PORTNOY, A. I.

[illegible], Application of Aromatic Azo-compounds of Arsenic in Chemical Anal ysis. I. (no subtitle) II. Arsenazo I Method for Determination of Cobalt. III. Determination of Lead in the Presence of Alkaline-Earth Metals, (In Russian) A. I. Portnoy, Zhurnal Obshchei Khimii (Journal of General Chemistry), v. 28(10), April 1958, p. 574-607.

Dissociation constants of several of the compounds were determined including effects of substituents. 29 ref.

Immediate source clipping

PORTNOY, A.L.

Lubricant for die-casting molds. Biul.tekh.-ekon.inform.Gos. nauch.-issl.inst.nauch. i tekh.inform.16 no.11:31-32 '63. (MIRA 16:11)

PORTNOY, A.S., kand. med. nauk; PYTEL', Yu.A., kand. med. nauk

Cineroentgenography in urology. Urologiia 29 no.1:62-71 '6[illegible]
(MIRA 17:8)

PORTNOY, A.S., kand. med. nauk

Radioisotope renography in the diagnosis of diseases of the kidneys and the upper urinary tract; a review of foreign literature. Urologiia 28 no.3:66-73 '63 (MIRA 17:2)

1. Iz urologicheskoy kliniki (zav. - prof. A.M.Gasparyan) I Leningradskogo meditsinskogo instituta imeni Pavlova.

PORTNOY, A.S. (Leningrad, K-9, Botkinskaya, ul., d.9, kv.53)

Primary neoplasms of the ureter. Vop.onk. 5 no.11:599-604 '59.
(MIRA 14:7)

1. Iz kafedry urologii (zav. - prof. A.M.Gasparyan) I Leningradskogo meditsinskogo instituta imeni I.P.Pavlova.
(URETER--TUMORS)

PORTNOY, A. S.

Association of hypernephroma with nephrolithiasis. Khirurgiia, Moskva no.9:64 Sept 1953. (CIML 25:5)

1. Of the Urology Clinic of Odessa Medical Institute.

GASPARYAN, A.M., prof.; PORTNOY, A.S., kand.med.nauk

Repeated nephrectomy. Urologiia 22 no.5:21-25 S-O '57. (MIRA 10:12)

1. Iz kafedry urologii (zav. - prof. A.M.Gasparyan) I Leningradskogo meditsinskogo instituta imeni akad. I.P.Pavlova (dir. - dotsent A.I. Ivanov)

(NEPHRECTOMY
repeated)

GASPARYAN, A.M., professor; PORTNOY, A.S.

Single-stage transvesical prostatectomy in prostatic hypertrophy. Urologiia no.4:10-15 O-D '56. (MLRA 9:12)

1. Iz kafedry urologii (zav. prof. A.M.Gasparyan) I Leningradskogo meditsinskogo instituta iemni akad. I.P.Pavlova (dir. - dotsent A.I.Ivanov)
(PROSTATE HYPERTROPHY, surgery,
transvesical one-stage technic)

PORTNOY, A.S., kand.med.nauk

Achalasia of the ureter. Urologiia no.5:70-76 '62.
(MIRA 15:12)

1. Iz urologicheskoy kliniki (zav. - prof. A.M. Gasparyan) I Leningradskogo meditsinskogo instituta imeni I.P. Pavlova.
(URETERS—DISEASES)

PORTNOY, A.S.

Treatment of urinary tuberculosis; survey of foreign literature. Urologiia 25 no. 4:66-72 Jl-Ag '60. (MIRA 14:1)
(KIDNEYS--TUBERCULOSIS)

PORTNOY, A.S., kand.med.nauk

So-called neurogenic bladder; survey of foreign literature. Urologiia 24 no.2:71-76 Mr-Ap '59. (MIRA 12:12)

1. Iz kafedry urologii (zav. - prof. A.M. Gasparyan) I Leningradskogo meditsinskogo instituta im. I.P. Pavlova.
(BLADDER, dis.
neurogenic bladder, review (Rus))

PORTNOY, A.S.; FRIDMAN, A.M., red.

[Surgical treatment of adenoma of the prostate gland] Khirurgicheskoe lechenie adenomy predstatel'noi zhelezy. Leningrad, Meditsina, 1965. 198 p. (MIRA 18:12)

PORTNOY, G.N., inzh.; REZNIK, G.V.

Remote control device for disconnecting idle transformers and regulating power flow in electric welding. Energ. stroi. no.31: 96-99 '62. (MIRA 16:7)

(Electric welding)

VAVILOV, Ye.N.; PORTNOY, G.P. Prinimali uchastiye: BARKOV, A.A.; OSINSKIY, L.M.; LYUBIMOVA, T.M., red.; SVESHNIKOV, A.A., tekhn. red.

[Synthesis of the circuits of electronic digital] Sintez skhem elektronnykh tsifrovykh mashin. Moskva, "Sovetskoe radio," 1963. 439 p. (MIRA 17:3)

PONYATOVSKIY, V.V.; PORTNOY, G.V.

Mechanized assembly of wooden boxes. Kons. i ov. prom. 12 no.11: 33-38 N '57. (MIRA 11:1)

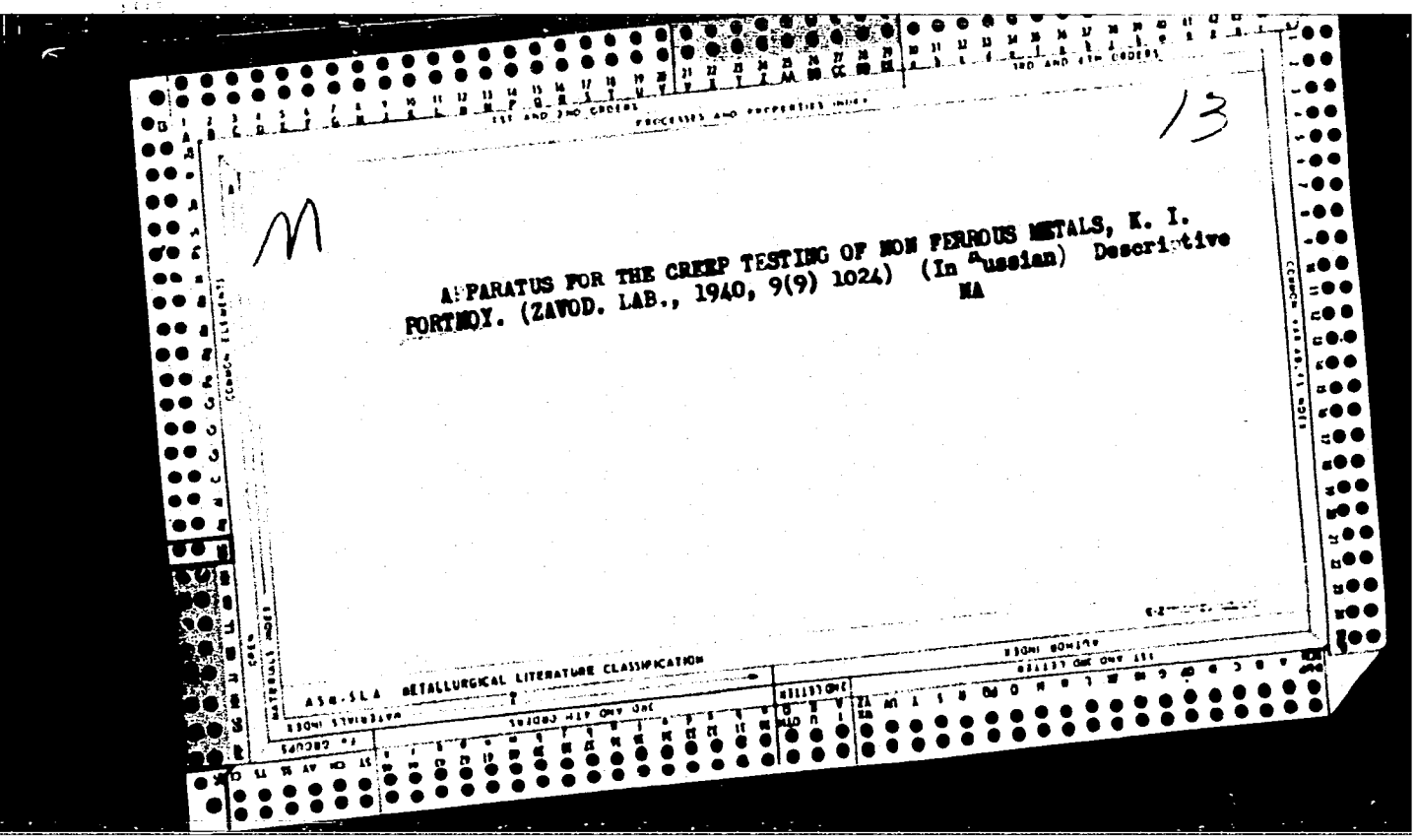
1.Vsesoyuznaya nauchno-issledovatel'skaya laboratoriya tary.
(Box making) (Food industry--Equipment and supplies)

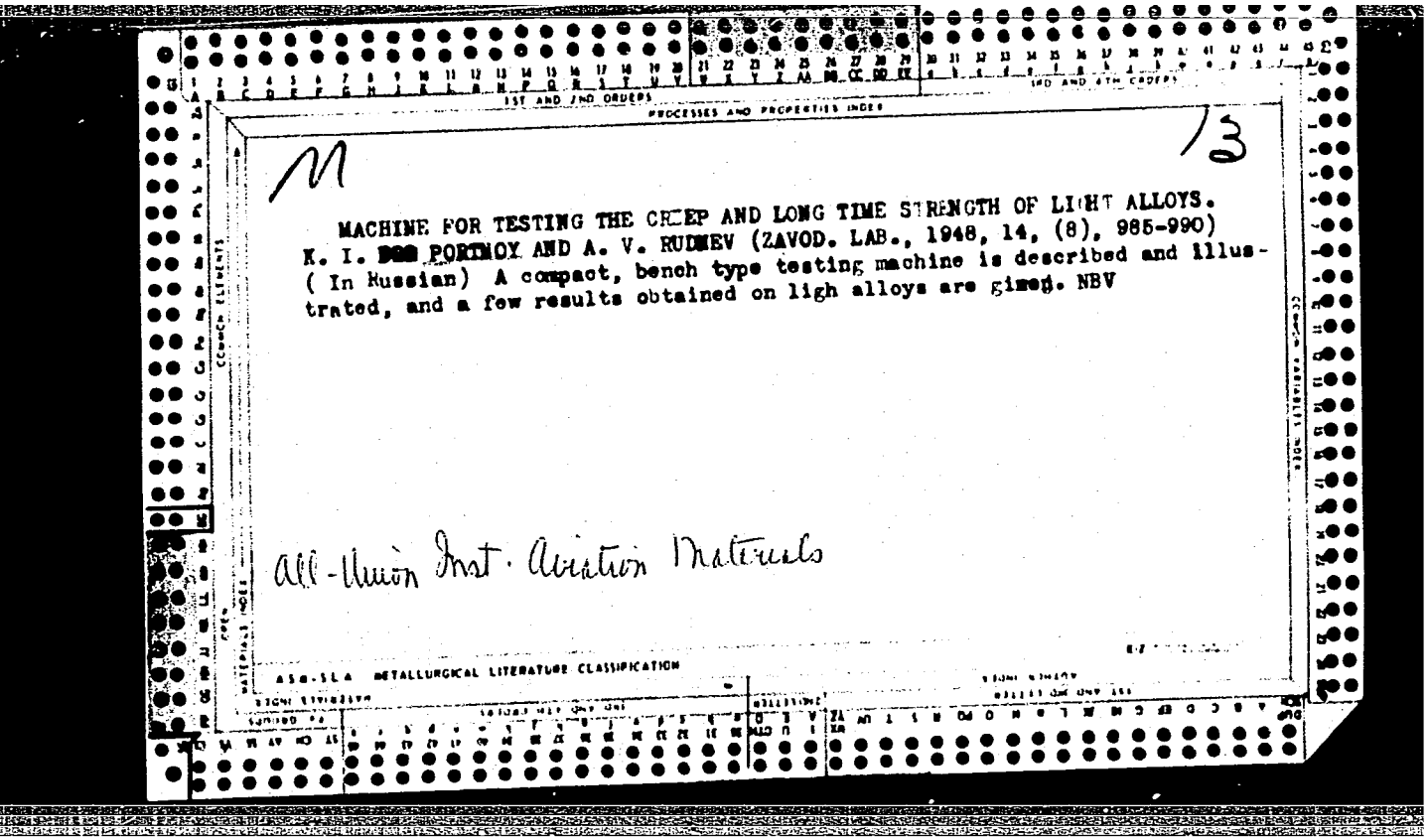
PORTNOY, I.

Cold Storage

Organization, control and recording load turnover in cold storage plants. Khol. tekh. 30, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.





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13

MACHINE FOR TESTING THE CREEP AND LONG TIME STRENGTH OF LIGHT ALLOYS. K. I. [redacted] PORTNOY AND A. V. RUDNEV (ZAVOD. LAB., 1948, 14, (8), 985-990) (In Russian) A compact, bench type testing machine is described and illustrated, and a few results obtained on ligh alloys are given. NBV

All-Union Inst. Aviation Materials

PORTNOY, K.I.; LEBEDEV, A.A.

[Magnesium alloys (properties and technology); a handbook] Magnievye splavy (svoistva i tekhnologiia) spravochnik. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1952. 736 p. (MLRA 6:9)
(Magnesium alloys)

USSR/Metals - Testing Jul 50

"Identity of the Heat-Resistance Indexes Obtained by the Creep Test and Continuous Hardness Test," K. I. Portnoy, N. M. Sadchikova, V. A. Blokhina

"Zavod Lab" Vol XVI, No 7, pp 858-862

Presents experimental data on investigation of dependence of heat resistance of alloys on their composition by methods of tensile and hardness tests under continuous load at temperatures of 20 and 300°. Investigates five cast alloys: Mg-Al, Mg-Ce, Mg-Ca, Mg-Sb and Al-Mg. Demonstrates that method of continuous hardness test

166T62

[redacted]

USSR/Metals - Testing (Contd) Jul 50

characterizes creeping property of alloys and therefore application of this method, instead of creep test, may accelerate research work on new heat-resisting alloys.

166T62

[redacted]

PORTNOY, K. I.

PORTNOY, K.I.

20-6-23/42

AUTHORS: Portnoy, K. I. , and Samsonov, G. V.

TITLE: Properties of Threefold Alloys TiB_2 - CrB_2 - ZrB_2 (Svoystva troynykh splavov diboridov titana, khroma i tsirkoniya)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 6, pp. 976 - 978 (USSR)

ABSTRACT: For the modern technical engineering of high mechanical stress at high temperatures borides of viscous rare metals are of interest, because they show a strong hardness and resistance to abrasion as well as stability toward acids. They shall be studied from systems in which extreme values of these properties are to be expected. In literature data on the systems mentioned in the title are almost entirely missed. Therefore the work under consideration has been attempted on diboride alloys lying at a " beam cross section" ("luchevoy razrez") TiB_2-CrB_2(50 : 50 mol.%) ZrB_2. Since it was known that borides of Ti and Cr, as well as of Ti and Zr form uninterrupted series of solid solutions, meanwhile borides of Cr and Zr are into one another soluble in a limited sense, it was interesting to follow, how the solubility of CrB_2 (?) in a solid solution TiB_2-CrB_2, compared to its limited solubility in CrB_2(?) and its uninterrupted solubility in TiB_2, and in reverse, vary itself.

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Card 2/2

SOV/24-58-7-29/36

AUTHORS: Portnoy, K.I. and Samsonov, G.V. (Moscow, Kiyev)

TITLE: Some Principles of the Alloying of Boride Alloys (Nekotoryye printsipy legirovaniya boridnykh splavov)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 7, pp 140 - 141 (USSR)

ABSTRACT: From a survey of investigations on the production of heat-resisting and non-scaling alloys based on refractory-metal borides the authors formulate five principles for such work. The main items in these are as follows. 1) The strength and plasticity of these alloys depend on the nature of the reaction of the borides with the alloying elements; if the reaction products are eutectics low melting compared with the boride base the strength and plasticity rise. 2) The heat-resisting properties of borides remain high if they are alloyed with dher high-melting borides or silicides, or with refractory metals forming with borides high-temperature eutectics (ZrB_2 + Mo), (Ti, Cr)B_2 + ZrB_2. 3) Resistance to oxidation of boride alloys is increased

Card 1/2

Some Principles of the Alloying of Boride Alloys

by alloying with silicon or silicides; silicides are particularly effective if on oxidation their metal forms a volatile oxide.
4) Brittleness can be reduced by reducing bonding forces in the boride base crystal lattice by dissolving less brittle borides in it.
5) Non-spalling characteristics are improved by alloying with substances which reduce brittleness.
There are 9 references, 8 of which are Soviet and 1 English.

SUBMITTED: March 11, 1958

PORTNOY, K.I.

PHASE I BOOK EXPLOITATION SOV/3559

Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. 5 (Investigations of Heat-Resistant Alloys, Vol 5) Moscow, Izd-vo AN SSSR, 1959. 423 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V.A. Klimov; Tech. Ed.: I.F. Kuz'min; Editorial Board: I.P. Bardin, Academician, G.V. Kurdyumov, Academician, N.V. Ageyev, Corresponding Member, USSR Academy of Sciences (Resp. Ed.), I.A. Oding, I.M. Pavlov, and I.F. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgical engineers, research workers in metallurgy, and may also be of interest to students of advanced courses in metallurgy.

COVERAGE: This book, consisting of a number of papers, deals with the properties of heat-resisting metals and alloys. Each of the papers is devoted to the study of the factors which affect the properties and behavior of metals. The effects of various elements such as Cr, Mo, and W on the heat-resisting properties of various alloys are studied. Deformability and workability of certain metals as related to the thermal conditions are the object of another study described. The problems of hydrogen embrittlement, diffusion and the deposition of ceramic coatings on metal surfaces by means of electrophoresis are examined. One paper describes the apparatus and methods used for growing monocrystals of metals. Boron-base metals are critically examined and evaluated. Results are given of studies of interatomic bonds and the behavior of atoms in metal. Tests of turbine and compressor blades are described. No personalities are mentioned. References accompany most of the articles.

2/2

PORTNOY, K. I.

PHASE I BOOK EXPLOITATION SOV/3602

Akademiya nauk SSSR. Institut metallurgii

Issledovaniye splavov tsvetnykh metallov; sbornik 2 (Analysis of Nonferrous Metal Alloys; Collection of Articles, [No.] 2) Moscow, Izd-vo AN SSSR, 1960. 204 p. Errata slip inserted. 2,800 copies printed.

Ed.: I.A. Oding, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: V.S. Rzheznikov; Tech. Ed.: T.P. Polenova; Editorial Board: A.A. Bochvar, Academician; N.Ye. Drits, Candidate of Technical Sciences (Deputy Resp. Ed.); M.V. Zakharov, Professor, Doctor of Technical Sciences; E.S. Kadaner, Candidate of Technical Sciences (Resp. Secretary); A.M. Korol'kov, Doctor of Technical Sciences; M.V. Mal'tsev Professor, Doctor of Technical Sciences; and Z.A. Sviderskaya, Candidate of Technical Sciences.

PURPOSE: This collection of articles is intended for workers in scientific research institutes, metal and machine works, for teaching personnel, and for students attending schools of higher education.

COVERAGE: This is the second volume in a series of works on nonferrous and [illegible] metal alloys prepared by the Institut metallurgii imeni A.A. Baykova AN [illegible] (Institute of Metallurgy imeni A.A. Baykov of the Academy of Sciences [illegible]), and the Moskovskiy institut tsvetnykh metallov i zolota imeni M.I. Kalinina (Moscow Institute of Nonferrous Metals and Gold imeni M.I. Kalinin). The problems discussed concern the casting and physical metallurgy of nonferrous alloys. The effect of alloying and deformation on the properties of various alloys, and the problems connected with the study of the casting properties and with the plotting of phase diagrams for nonferrous alloys are discussed. No personalities are mentioned. References accompany most of the articles.

SOV/180-59-2-23/34

AUTHORS: Portnoy, K.I., Samsonov, G.V., and Frolova, K.I. (Moscow, Kiyev)

TITLE: Alloying Boride Alloys with Silicon (Legirovaniye boridnykh splavov kremniyem)

PERIODICAL: Izvestiya akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 2, pp 117-121 (USSR)

ABSTRACT: Alloying with silicon or silicides has been shown by two of the authors (Ref 6) to be effective in increasing the resistance of borides to oxidation. The authors now discuss some boride systems and describe their experiments which had the aim of studying the influence of additions of molybdenum and tungsten silicides and also elementary silicon on the resistance to oxidation of the double boride (Ti, Cr) B_2 with a molar ratio TiB_2 : CrB_2 = 4 : 1. This material has good mechanical and non-scaling properties (Refs 9, 10) and is an important component of technical borides. The alloys were prepared from mixtures of powders of the double-boride with those of the additions by hot compression followed by prolonged high-temperature annealing and slow cooling. Cylindrical test pieces 8 - 14 mm in diameter and 6 - 10 mm long, were used. These were subjected to metallographic and

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Alloying Boride Alloys with Silicon

X-ray investigation. Oxidation in air was studied by the weighing method at 1000, 1100 and 1200 °C. Resistance to oxidation was increased several fold by additions of molybdenum disilicide; 15-20 wt.% being satisfactory. Table 1 shows the gains in weight for materials with 5% silicon after various heating times, while Fig 1 shows these values and those for tungsten silicide, and for silicon at 1200 °C as functions of heating time. The results showed that the protective effect of silicon was approximately the same whether it had been added as the element or as silicide. The extent of oxidation of silicon-containing borides was small at 1000 - 1200 °C in 100 hours (Table 2 and Fig 4). When the density of specimens decreased additions of molybdenum silicide increased resistance to oxidation, while additions of silicon reduced it. The authors explain this effect in terms of the different behaviour of the materials on evaporation. Electron diffraction study by I.A. Ponizovskaya of oxide films obtained at 1200 °C in 5 hours showed that they are amorphous. The authors stress

Alloying Boride Alloys with Silicon

that in alloying with silicon or silicides the effect on density and mechanical properties must be borne in mind.

There are 4 figures, 3 tables and 10 references, 9 of which are Soviet and 1 German.

Card 3/3

SUBMITTED: December 16, 1958

5(2) SOV/20-125-4-37/74

AUTHORS: Portnoy, K. I., Samsonov, G. V., Solonnikova, L. A.

TITLE: On the Interaction of Boron Carbide With Silicon (K voprosu o vzaimodeystvii karbida bora s kremniyem)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 4, pp 823-825 (USSR)

ABSTRACT: The system boron-silicon-carbon is interesting because of its considerable hardness, its chemical stability and its semiconductor-properties. In the system boron-carbon e.g. the compounds B_4C and $B_{6.5}C$ (hardness 5000-5500 kg/mm^2, Refs 1, 2) are found, in the system silicon-carbon the SiC-compounds with a hardness of 3350 kg/mm^2 (Ref 3); the boron-silicon-system contains also compounds with similar properties (Ref 4). After a survey of publications (Refs 5-8) the authors discuss the results they had achieved. They pressed mixtures of silicon and boron carbide powder at 1700-2350° for 1.5 - 8 minutes. In this connection part of the silicon volatilized. A clearly marked maximum of the specific weight was pycnometrically determined, i.e. at 25-30 % by weight of Si. Figure 1 shows the microstructures typical of the alloys investigated. Already

Card 1/3

at an addition of 2% Si to boron carbide a lighter colored phase forms (Fig 1b). The amount of this phase varies only little up to a 20% Si-content, whereas in the case of 28% Si it increases considerably (Fig 1v). In the latter casethe micro-hardness attains 2000 kg/mm^2. It remains practically constant in the case of further Si-increase (Fig 2a). This phase is apparently a saturated solid solution of boron and carbon (or boron carbide) in silicon. In the case of 25% Si the micro-structure shows clear separations of the chemical compound (Fig 1g). The hardness of the second phase increases with increasing silicon-content in the alloy and attains a maximum of $\sim$ 7000 kg/mm^2 in the case of an Si-content of 40-50% by weight. It then decreases to 3500-4000 kg/mm^2 (Fig 2b). From 50% silicon onwards a fine-grained eutectic becomes visible between the grains of the silicon- and carbide phase (up to 80% Si-content in the alloy). On an addition of 20% Si to boron carbide the X-ray investigation shows the appearing lines of a new phase. They are most clear at 35-40% Si; at 50-70% Si they pass over into the lines of the solid solution of boron and carbon in silicon, which are well marked at 75% Si (Fig 3). The maximum of electric resistance of the samples is attained at 28-35% Si in the alloys. From the above it is

possible to draw a conclusion on the formation of a ternary phase of boron with silicon and carbon which may have the composition B_5SiC_2. Its hardness of ~7000 kg/mm^2 explains its high grinding capacity (Ref 9). This phase has a constant resistivity to oxidation in air, at least up to 1200°, to mineral acids and their mixtures also in the case of boiling. There are 3 figures and 9 references, 5 of which are Soviet.

ASSOCIATION: Vsesoyuznyy institut aviatsionnykh materialov (All-Union Institute of Aviation Material). Institut metallokeramiki i spetssplavov Akademii nauk SSSR (Institute of Powder Metallurgy and Special Alloys of the Academy of Sciences USSR)

PRESENTED: December 16, 1958, by A. A. Bochvar, Academician

SUBMITTED: December 16, 1958

18.6000

77162
SOV/129-60-1-[illegible]

AUTHORS: Babich, B. N. (Engineer), Portnoy, K. I. (Candidate of Technical Sciences), Samsonov, G. V. (Professor, Doctor of Technical Sciences)

TITLE: Pressing and Sintering of Boride Powders

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 1, pp 31-35 (USSR)

ABSTRACT: The first investigation of the processes of pressing powders of various compositions was carried out in earlier work (Samsonov, G. V., Neshpor, V. S., D.A.N. SSSR, Vol 104, 1955). Later on G. A. Meerson developed a theory of sintering for plastic metals. In this work the authors investigate the pressing and sintering of (1) titanium and chromium boride powders, and (2) titanium and chromium boride alloys (ratio of molar concentration TiB_2:CrB_2 = 4:1). The initial titanium and boride powders were prepared by the thermal-vacuum method, and double titanium-chromium boride by homogenization of these boride

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Pressing and Sintering of Boride Powders

77162
SOV/129-60-1-10/22

mixtures at 1,700° C for 1 hr in a vacuum. The size of particles of all three powders ranged between 2 and 3 micron. The weight of 1 ml of powders TiB_2, CrB_2, $(Ti,Cr)B_2$ is (in grams) 0.80, 1.05, 0.97, respectively.

Pressing: The method of investigating the process of pressing consists in studying the effect of holding under pressure on density of compressed briquettes, measuring the elastic aftereffect, and studying the effect on density of intermediate grating of compressed briquettes. None of the tested plasticizers markedly improved the pressibility of briquettes, although briquette strength was at a maximum when using $FeCl_3$ solution. Fig. 1 shows the results of pressing depending on compacting pressure. The data show that TiB_2 is endowed with the best pressibility.

Card 2/7

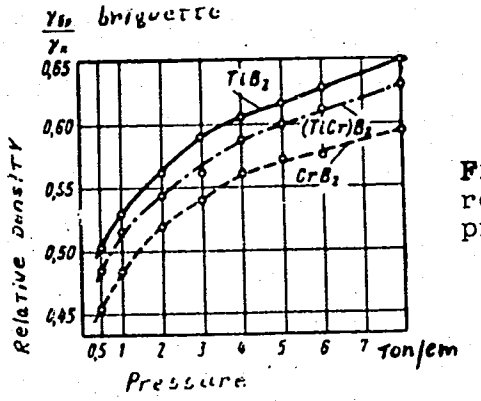

Fig. 1. Correlation between relative density and compacting pressure.

Fig. 2 shows a compacting pressure diagram in logarithmic coordinates $\log p_{sp}$-$\log\beta$, where β is relative volume $\beta = \frac{\gamma_{compact}}{\gamma_{briquette}}$, showing that

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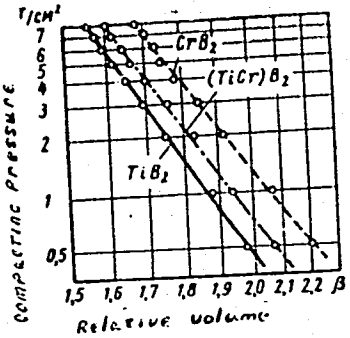

Fig. 2. Correlation between relative volume and compacting pressure.

the process of pressing is well expressed in straight lines. For TiB_2 $\log p_{sp} = -11.07 \log \beta + 3.02$; for CrB_2 $\log p_{sp} = -10.48 \log \beta + 3.25$; for $(TiCr)B_2$ $\log p_{sp} = -11.29 \log \beta + 3.24$ (p_{sp} = specific pressure). The authors conclude that the process

of compacting titanium, chromium and titanium boride solid solution powders is described by the logarithmic relationship between relative volume and compacting pressure. Results of determining the elastic aftereffect are shown in Fig. 3. The elastic aftereffect

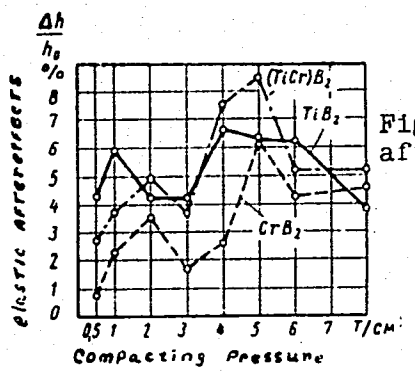

Fig. 3. Relationship between elastic aftereffect and compacting pressure.

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of the investigated materials is of major importance since the character of the relationship of aftereffect and pressure is connected with high brittleness and nonplasticity of borides. Sintering: In order to observe sintering conditions, the briquettes were compacted under a pressure of 3 ton/cm^2 and sintered in a vacuum (0.1 mm Hg) in a retort furnace with a graphite heater. To determine the optimum sintering temperature the specimens were sintered within the 1,700-2,400° C range for 1 hr. It was found that the sintering process occurs in two stages: (1) minor density increase at maximum temperatures up to 2,100-2,200° C; and (2) intensive density increase above these temperatures. TiB_2 boride and solid solution $(Ti,Cr)B_2$ were held at 2,300° C while CrB_2 was held at 2,000° C: The maximum density was obtained at a holding time of 120 min. As a result, the process of compacting boride briquettes in sintering consists in drawing particles into the pore space at temperatures of the second stage of sintering at which the forces of surface tension

PORTNOY, K.I.

Properties of boride-base materials and other high-melting compounds. Issl.splav.tsvet.met. no.2:197-204 '60.
(MIRA 13:5)

(Borides) (Powder metallurgy)

83127

S/078/60/005/009/010/017
B015/B064

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24.7700

AUTHORS: Portnoy, K. I., Samsonov, G. V., Solonnikova, L. A.

TITLE: Melts in the System Boron - Silicon - Carbon

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 9, pp. 2032-2041

TEXT: The conditions of synthesis and properties of some B-Si-C melts were determined by microscopic-, X-ray-, microanalytical-, and chemical analyses, and the melting temperature and electrical properties of the melts B_4C-Si and SiC-B were determined. On investigating B_4C-Si melts, chemical analyses (Table 1) showed that a silicon content is found in the mixture which is close to the theoretical value of 25-35 wt% Si. When determining the specific weight (Table 2) a maximum value was found to be attained at approximately 30% Si, which may be traced back to the formation of a new phase with denser packing. At an Si content of 10-50% the melting point varies between 2200° and 2400°C, to decrease at 70% Si to 1600°-1700°C. At an Si content of approximately 25 wt% in the alloy, a hardness maximum of about 7000 kg/mm^2 was found to exist, where also a maximum of electrical resistance, and a minimum of thermo-electromotive force was determined, and the

Card 1/2

15. 2200

78211
SOV/80-33-3-12/47

AUTHORS: Portnoy, K. I., Samsonov, G. V., Frolova, K. I.

TITLE: Concerning Some Properties of Boron Carbide Alloys With Titanium Boride and With Titanium-Chromium Boride

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 3, pp 577-582 (USSR)

ABSTRACT: Samples of the above alloys were prepared by pressing the powdered carbide and borides at 2,100-2,400° C for 10 to 15 minutes, after which their structure, phase composition, microhardness, and resistance to oxidation were determined. The results are given in Tables 1, 2, and 3. It was concluded that these alloys are not sufficiently heat resistant except for short-term service. There are 3 tables; 4 figures; and 5 references, 4 Soviet, 1 U.S. The U.S. reference is: F. Glaser, J. Metals, 4, 391 (1952).

SUBMITTED: November 11, 1958

Card 1/4

Table 1. Properties of TiB_2-B_4C System Alloys

A		B		D					E
TiB_2	B_4C	C	C	F	F	F	F	F	
100	—	3400	—	24.5	38.4	62.0	68.1	73.7	135
90	10	3565	5700	4.6	5.7	6.33	—	6.4	59
80	20	3560	6100	2.4	3.74	4.08	—	4.3	53
70	30	3560	6100	6.0	7.05	6.45	—	7.55	67
60	40	3560	5700	7.34	7.32	4.37	—	3.85	114
50	50	3560	6100	6.84	2.7	5.16	—	2.03	99
40	60	3560	6100	—	−0.2	−2.42	—	−4.54	91
30	70	3560	5700	−2.46	−5.2	−5.0	—	−5.75	99
20	80	3560	6100	—	−4.62	—	−38.2	−71.0	74
10	90	—	—	—	−41.6	−125.0	−195.0	−276.0	22
5	95	—	—	—	−12.8	−75.5	−116.6	−173.7	—
3	97	—	—	—	−27.1	−84.1	−129.0	−197.5	—
0	100	—	4900	−1.11	−9.88	−8.1	—	−11.3	70

Key to Table 1: (A) Composition (wt %); (B) Micro-hardness at 50 g (in kg/mm^2); (C) Phase based on; (D) Change in wt of samples on oxidation in air at 1,200° C (mg/cm^2); (E) Compression strength (kg/mm^2); (F) Hours.

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Table 2. Properties of (Ti, Cr)B_2-B_4C System Alloys

A		B		D				
(Ti, Cr)B_2,	B_4C	C	C	F	F	F	F	F
100	0	3530	—	29.4	—	57.0	66.0	71.3
90	10	3180	5400	24.1	32.1	33.5	39.9	36.7
80	20	3210	5050	21.0	32.4	38.6	39.5	40.9
70	30	3200	4700	20.6	29.2	32.4	33.5	34.8
60	40	3180	4910	18.9	19.8	19.2	17.2	11.7
50	50	—	—	—	—	—	—	—
40	60	—	—	29.1	44.4	12.3	0.034	−23.8
30	70	—	—	22.2	17.9	0.95	−9.2	−25.0
20	80	—	—	—	—	—	—	—
10	90	3200	5000	3.26	0.11	−7.5	−11.7	−15.6
0	100	—	4900	−1.11	−3.88	−8.1	—	−11.3

Key to Table 2: (A) Composition (wt %); (B) Microhardness at 50 g (in kg/mm^2); (C) Phase based on; (D) Change in wt of samples on oxidation in air at 1,200° C (mg/cm^2); (E) Compression strength (kg/mm^2); (F) Hours.

Card 3/4

PORTNOY, K.I.

PHASE I BOOK EXPLOITATION SOV/5828

Samsonov, Grigoriy Valentinovich, and Kim Isayevich Portnoy

Splavy na osnove tugoplavkikh soyedineniy (Alloys Based on High-Melting Compounds) Moscow, Oborongiz, 1961. 303 p. Errata slip inserted. 4550 copies printed.

Reviewers: I.N. Frantsevich, Corresponding Member, Academy of Sciences USSR, N.M. Sklyarov, Doctor of Technical Sciences, Professor, and M.Yu. Bal'shin, Candidate of Technical Sciences; Ed.: M.A. Bochvar, Engineer; Ed. of Publishing House: S.I. Vinogradskaya; Tech. Ed.: V.P. Rozhin; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for engineers and scientific research workers in industries using refractory metals and alloys.

COVERAGE: Methods used in the search for alloys based on high-temperature melting compounds are discussed. The physicomechanical

Card 1/6

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15.2220 2808, 1273, 1142

S/180/61/000/002/011/012
E073/E535

AUTHORS: Portnoy, K. I., Levinskiy, Yu.V. and Fadeyeva, V.I. (Moscow)

TITLE: On the Nature of Interaction of Some High Melting Point Carbides and their Solid Solutions with Carbon

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1961, No.2, pp.147-149

TEXT: The diagrams of state of metal-carbon systems (the metal being Ti, Zr, Nb, Ta, Hf) have been studied in considerable detail. However, no data are available in literature on the interaction in the pseudo-binary systems TiC-C and NbC-C and as regards ZrC-C, TaC-C and HfC-C it is only mentioned that their diagrams are of a eutectic character. The aim of the work described was to determine the nature of the interaction of such carbides and their solid solutions with carbon. Particular attention was paid to investigating the temperature of appearance of the liquid phase in such systems. The equipment consisted of heating apparatus of 25 kW, the heating being carried out by direct passage of current through a graphite cartridge, inside which the investigated carbide

Card 1/

On the Nature of Interaction ... S/180/61/000/002/011/012
E073/E535

was placed on a graphite base. The experiments were carried out in an argon atmosphere with a pressure of 5 to 10 mm Hg in excess of the atmospheric pressure. The temperature of appearance of the liquid phase was determined as the minimum temperature at which a thin layer of the carbide powder fused with particles of 10 to 10 μ on the graphite base. The fusion was observed visually after cooling the specimens. The temperature was measured by an optical pyrometer. Near the liquid phase temperature the measurements were made at steps of 20 to 30°C, the average accuracy of measuring the temperature being ±50°C. Metallographic analysis has shown that the pseudo-binary systems TiC-C, ZrC-C, NbC-C, TaC-C, HfC-C and the pseudo-ternary systems TiC-ZrC-C, NbC-ZrC-C, NbC-TiC-C, TaC-NbC-C, TaC-TiC-C, TaC-ZrC-C, TiC-HfC-C and ZrC-HfC-C are eutectic in nature. Microphotographs of the eutectic structures of the first five systems are reproduced in Fig.1. X-ray analysis of solidifying drops of the eutectic showed that two phases were present in the specimens, namely, graphite and the appropriate carbide. This confirmed the suitability of the selected method of investigations. Fig.2 shows the hypothetical diagrams of state of

of binary eutectics in these pseudo-ternary systems depends to a considerable extent on the composition of the solid solution of the carbides. These dependences are plotted in Fig.4 (t,°C vs. wt.%). Data were obtained on the fusion temperature and the composition of the eutectics in the systems TiC-C and NbC-C. The fusion temperatures of the eutectics of the ZrC-C and TaC-C systems are in good agreement with the data given in the literature (Refs.2-3). However, the fusion temperature of the eutectic of the system HfC-C was 450°C higher than the value given by P. Cotler and I. J. Kohn (Ref.4). It was established that the diagrams of state of the pseudo-ternary systems TiC-ZrC-C, NbC-ZrC-C, NbC-TiC-C, TaC-NbC-C, TaC-Ti-C-C, TaC-ZrC-C have a eutectic nature. Furthermore, the dependence was determined of the temperatures of formation of binary eutectics in these systems as a function of the composition of the carbide phase. There are 4 figures and 8 references: 3 Soviet and 5 non-Soviet.

[Abstractor's Note: This is a slightly condensed translation.]

SUBMITTED: September 12, 1960

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D223/D305

21.2100

AUTHORS: Portnoy, K.I., and Levinskiy, Yu.V.

TITLE: Production of technical zirconium nitride

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 7, 1961, 1413 - 1418

TEXT: The present works deal with possibility of direct nitrogenation of zirconium powder by utilizing the heat of formation of zirconium oxide and nitride to heat the metallic powder to the temperature required for active nitrogenation. Usually in direct nitrogenation the zirconium powder is placed in a quartz tube, heated to the required temperature at a low rate of nitrogen flow. In the present work such a scheme for producing zirconium nitride is given with special emphasis on the quantity of the oxidizing agent (H_2O). The water is chosen as a source of oxygen since it gives a lower heat effect when compared to oxygen or air. Initially, the zirconium was in a damp state (20-50 %, moisture) hence,

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Production of technical ...

before charging the furnace, it required prolonged drying in vacuum at 100-110°C, for 2-3 hours. Since nitrogen was dried, the change in moisture content of the zirconium powder regulated the quantity of oxygen in the reaction zone. The volume of the quartz tube used was 5 l and since both inlet and outlet temperature of the gas was kept at 30°C, the maximum partial steam pressure was determined, ignoring the hot zone condition, and found to be 31 mm of st. mercury pressure. The excess water was frozen out. The results of calculated quantities of water required for maximum pressure of saturated steam at 30°, is given in tabulated form. The calculated values of saturated steam pressure are plotted by the authors against the quantities of water required to heat the powders to 400 and 800°C, and the calculated values of ZrO_2 and O_2 in the final product are plotted against the additions of different quantities of water assuming that the whole of the water reacted with zirconium to form ZrO_2, i.e.

$$Zr + 2H_2O = ZrO_2 + 2H_2.$$

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Production of technical ...

It was suggested that the whole exothermal heat due to the oxygenation and nitrogenation is used up in warming the powder, i.e. there is no heat loss at all, and the maximum rise in temperature for various quantities of oxygenation can be calculated and equated to the heat obtained from the oxygenation and nitrogenation process. The standard enthalpies of water and ZrO_2 are 57.8 and 258.5 kcal/mole respectively (Ref. 3: O. Kubashevskiy and E. Evans, Termo-khimiya v metallurgii, Il. 1954) hence, the standard enthalpy for following reaction

$$Zr + 2H_2O = ZrO_2 + 2H_2 + \Delta H$$

is 142.9 kcal/mole. The calculation taking $C_p = f(T)$ for temperature of 1200°C gives the heat effect of 133.6 kcal/mole. To carry out the experimental trials the set-up given in Fig. 4 was used. The nitrogen from cylinder (1) was dried by passing through tower (2) filled with silica-gel and then through towers (3), (4) and (5) filled with calcium chloride and then passed through the quartz tube in the silica furnace (6). The powder was kept in a molybdenum

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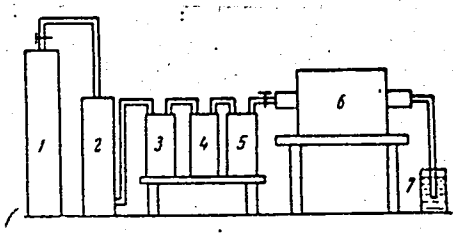
Production of technical ...

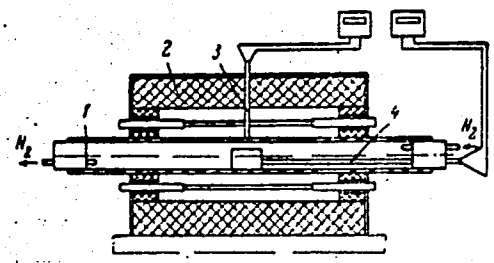
Fig. 4.



or porcelain boat. The system ended with the water seal (7) which acted as a pressure regulator for nitrogen. To study the rise in powder temperature the set-up, shown in Fig. 5 was used. Through quartz pipe (1) containing damp Zr powder and placed inside silica furnace (2), nitrogen was passed and a small rise in temperature noted. The thermocouple (3) controlled the temperature of the tube and temperature of the powder itself by a Pt/Pt-Ro thermocouple in a ceramic cover (4). Since the mass of powder was small (30 g), the

Production of technical ...

Fig. 5.



heat used to raise the temperature of the ceramic resulted in a low temperature recorded by the thermocouple. The results are given in Fig. 6. The effect of the quantity of water, heating temperature and particle size of the powder on achieving the critical oxidation rates was studied and the results are given in graphic and tabulated from. The conclusion drawn is that heating damp Zr powder at 450-6000C in the nitrogen current for 15 mins. would

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Production of technical ...

Fig. 6. Change in temperature of the charge (1) and working space (2) with the time.

Legend: A = temperature ^{o}C; B = time, min.

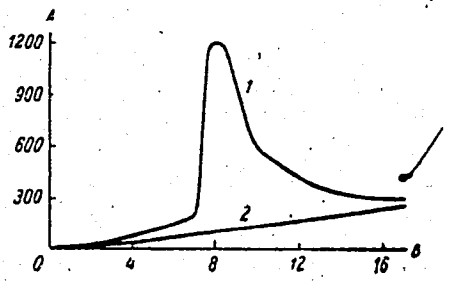

Рис. 6. Изменение температуры шихты (1) и рабочего пространства (2) во времени.

А — температура (°С), Б — время (мин.).

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Production of technical ...

give a product containing 9.5 - 10.2 wt. % of nitrogen, i.e. an oxynitride of zirconium which can be used instead of pure zirconium nitride. The authors note that zirconium nitride has a large homogeneous region ($ZrN_{0.56}$ - $ZrN_{1.00}$) and stable lattice period (a = 4.57 - 4.58 k kh). Hence the product obtained has a varying nitrogen composition and small quantities of dissolved oxygen. The authors thank G.V. Samsonov for his suggestions. There are 7 figures, 3 tables, and 4 Soviet-bloc references.

SUBMITTED: October 14, 1960

Card 7/7

PORTNOY, K. I.; PONOMAREV-STEPNOY, N. N.; NOSOV, V. N.; SAVELYEV E. G.

"Absorption materials of the dispersion type for the control organs of thermal reactors."

Report presented at the Symposium on Physics and Material Problems of Reactor Control Rods Program, Vienna, 11-15 Nov 63.

PORTNOY, K. I.

PROTNOY, K. I.

"Regularities in the changes of absorber materials properties as a function of absorber concentration."

Report presented at the Symposium on Physics and Material Problems of Reactor Control Rods Program, Vienna, 11-15 Nov 63.

PORTNOY, K.I.; LEVINSKIY, Yu.V.

Interaction in systems high-melting metals - carbon - nitrogen. Issl. splav. tsvet. met. no.4:279-285 '63. (MIRA 16:8)

(Ceramic metals—Thermodynamic properties)

L 10730-63/ EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD/JG

ACCESSION NR: AP3002261 S/0089/63/014/006/0559/0562

55

AUTHOR: Portnoy, K. I.; Fadeyeva, V. I.; Timofeyeva, N. I.

TITLE: Polymorphism of some oxidizers of rare-earth elements and their interaction with water

SOURCE: Atomnaya energiya, v. 14, no. 6, 1963, 559-562

TOPIC TAGS: samarium, europium, gadolinium, polymorphism

ABSTRACT: Polymorphism of the oxidizers, samarium, europium and gadolinium is considered. The presence of two modifications of these oxidizers is established and the temperature of phase transformation is determined. It is shown that the activation of these oxidizers in relation to boiling water depends on their structure. Quantitative laws governing the solubility of the oxidizers in boiling water are introduced. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 27Aug62 DATE ACQ: 12Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 001 OTHER: 004

Card 1/1

PORTNOY, K.I.; LEVINSKIY, Yu.V. (Moscow)

High temperature equilibrium of the reaction $HfN + C \rightleftarrows HfC + 1/2\ N_2$. Zhur. fiz. khim. 37 no.11:2467-2473 N'63. (MIRA 17:2)

ACCESSION NR: AP4005444 S/0076/63/037/012/2627/2634

AUTHOR: Portnoy, K. I. (Moscow); Levinskiy, Yu. V. (Moscow)

TITLE: Study of the high-temperature equilibrium of the reversible reaction between TiN + C and TiC + 1/2N_2

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 12, 1963, 2627-2634

TOPIC TAGS: high temperature refractory, refractory material, refractory carbide, refractory nitride, titanium carbide, titanium nitride, high temperature equilibrium, titanium carbonitride formation, activation energy, equilibrium constant, solid phase diffusion

ABSTRACT: The equilibrium compositions and lattice parameters of the TiC-TiN solid solutions have been determined in the 1480—2480C range at a nearly atmospheric nitrogen pressure. A series of powdered samples of 1) titanium carbide, 2) titanium nitride and carbon black in a 2:1 ratio, and 3) titanium and carbon black in a 2:1 ratio were heated simultaneously in a stream of nitrogen for 15 min to 32 hr at the desired temperature and then cooled rapidly. The reaction products were analyzed chemically and by x-ray. The x-ray powder patterns

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ACCESSION NR: AP4005444

were obtained with URS-70 and URS-50I equipment; the lattice parameters were measured in a KROS-1 chamber. The x-ray composition data are shown to be more accurate than the chemical data. The good agreement of the lattice-parameter data obtained with different starting materials indicated that a state of equilibrium had been reached within the 1700—2480C range. X-ray data revealed that intragranular diffusion is the limiting factor in the equilibration process in either direction. Nearly pure TiN was obtained in the reaction of titanium with nitrogen and carbon after 4 hr at 1480C. Thermodynamic calculations show 1) that the investigated reaction can be described by the equation:

$$[TiN] + C \rightleftarrows [TiC] + 1/2N_2 \qquad (1)$$

and 2) that the calculated equilibrium constant (K_p) is in satisfactory agreement with the experimentally determined K_p for reaction (1). The empirical temperature dependence of K_p ($\log K_p = -(5600/T) + 2.78$) has thus been verified. The activation energy of carbonitride formation from TiC and nitrogen was calculated from the experimental straight-line plot of $\ln(1/\tau) = f(1/T)$, where τ is the time necessary to reach equilibrium. Orig. art. has: 2 tables and 6 figures.

Card 2/2

L 14360-65 EWT(m)/EPF(c)/EPF(n)-2/EWA(d)/EPR/EWP(t)/EWP(b) Pr-4/Ps-4/
Pu-4 AFWL/SSD/ASD(m)-3/ESD(gs) JD/JG/DM
ACCESSION NR: AP4043985 S/0089/64/017/002/0107/0113

AUTHOR: Nosov, V. I.; Ponomarev-Stepnoy, N. N.; Portnoy, K. I.; Savel'yev, Ye. G. 6

TITLE: Dispersion-type absorbing materials for control rods of thermal reactors 19

SOURCE: Atomnaya energiya, v. 17, no. 2, 1964, 107-113

TOPIC TAGS: thermal reactor, reactor control rod, control rod, absorption material, rare earth element, nimonic alloy, samarium, europium, galodinium, erbium, dyprosium, lanthanide 18

ABSTRACT: The physical properties of neutron-absorbing materials made of nimonic-type alloys with rare-earth oxides dispersed in them, were investigated for the purpose of determining their use as control rods in thermal reactors. The experiment included the investigation of several elements of the lanthanide group, i.e., samarium, europium, galodinium, erbium, and dysprosium, which are characterized by their large neutron absorption cross section and ability tobe usedas admixtures to a

Card 1/3

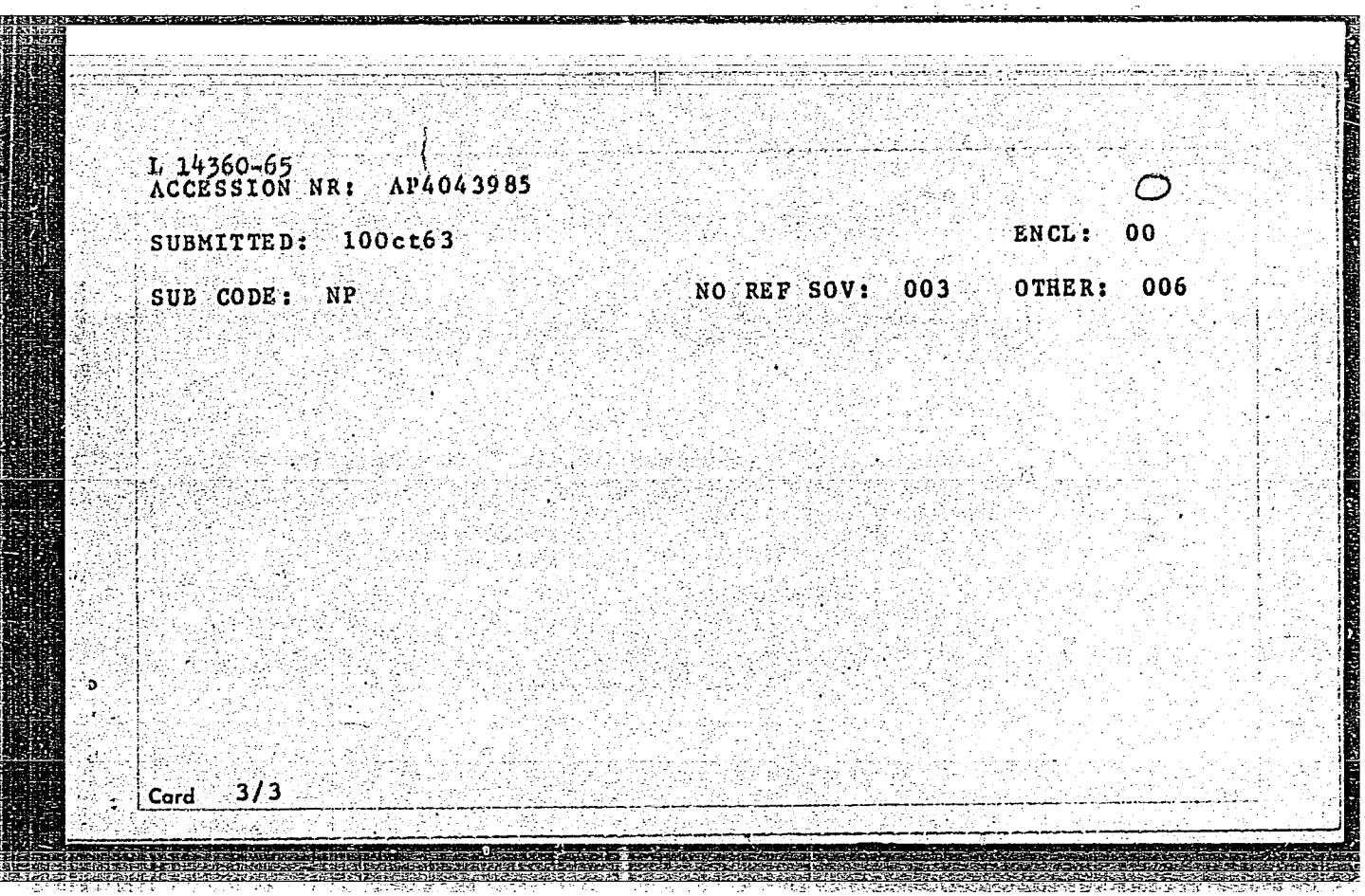
L 14360-65

ACCESSION NR: AP4043985

heat-resistant nimonic base. The cylindrical specimens measured 10—25 mm in diameter and 100—220 mm in length (the ratio of length to diameter ~10). Effectiveness was measured at room temperature in the core of a thermal reactor. The investigation of radiation resistance of the investigated materials shows that after irradiation by an integrated neutron flux of $\sim 3 \cdot 10^{20}$ thermal n/cm^2 (in air medium at 1000C) no noticeable change in dimensions was noticed. It was established that of the investigated materials europium oxide is the most promising for use in control rods, since it is an absorber with a slow burn-up rate making it suitable for lengthy reactor runs. It was also noticed that absorbing alloys with admixtures of rare-earth oxides dispersed in a metallic matrix have a significant absorbing property at a relatively small content of absorber in the alloy (about ~5—10 weight %). The investigated alloys are of relatively high strength and have good thermophysical properties at increased temperatures in the area of the absorber's concentration up to about 10 weight %. Orig. Art. has: 7 figures, 6 tables, and 2 formulas.

ASSOCIATION: none

Card 2/3



L 14360-65
ACCESSION NR: AP4043985

SUBMITTED: 100ct63 ENCL: 00

SUB CODE: NP NO REF SOV: 003 OTHER: 006

Card 3/3

L 21205-66 EWT(m)/ETC(f)/EPF(n)-2/EWG(m)/T/EWP(t) IJP(c) JD/WW/JG

ACC NR AP6001471 (N) SOURCE CODE: UR/0226/65/000/012/0036/0038

AUTHOR: Portnoy, K. I.; Levinskiy, Yu. V.; Salibekov, S. Ye.

ORG: none

TITLE: Isothermal saturation of refractory metals with nitrogen and step nitriding

SOURCE: Poroshkovaya metallurgiya, no. 12, 1965, 36-38

TOPIC TAGS: metal, refractory metal, annealing, nitrogen, periodic system, annealing, titanium, zirconium, niobium, tantalum, nitriding

ABSTRACT: The article deals with studies of optimal conditions for nitriding of compact samples of group IV and V metals of D. I. Mendeleyev's periodic system. The effect of the rate of temperature rise during isothermal annealing of samples in a nitrogen medium on the nitriding process was investigated. Optimal rates of temperature rise for nitriding of 1-mm thick samples of titanium, zirconium, niobium and tantalum are established, and it is shown that isothermal saturation of group IV and V metals with nitrogen is best carried out in stages. [Based on author's abstract] [AM]

SUB CODE: 11/ SUBM DATE: 11Jun65/ ORIG REF: 001/ OTH REF: 005

Card 1/1

L 13108-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/WW/JW/JG/JWD

ACC NR: AP5025787 SOURCE CODE: UR/0363/65/001/009/1513/1520

AUTHOR: Portnoy, K. I.; Timofeyev, V. A.; Timofeyeva, Ye. N.

ORG: none

20
B

TITLE: Thermodynamics of reactions producing rare earth hexaborides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 9, 1965, 1513-1520

TOPIC TAGS: rare earth, thermodynamic calculation, heat of formation, free energy, boride

ABSTRACT: The authors made a thermodynamic calculation of the reactions forming rare earth hexaborides in the vacuum thermal reduction of rare earth oxides with boron, boron carbide, and a boron-carbon black mixture. Heats of formation of the hexaborides were obtained by an approximate thermodynamic calculation for standard conditions and the heats of formation of the oxides were calculated from comparison. Calculations were based on A. F. Kapustinskiy's thermochemical logarithmic curve

$$\frac{\Delta H_f}{\omega} = a \ln z + b$$

UDC: 661.865

Card 1/2

L 13108-66

ACC NR: AP5025787

where ω is the valence, a and b are empirical constants, and z is the atomic number. The results were used for the calculation of the reactions: derivation of equations for the free energy at standard conditions (ΔH°_{298}) of reactions forming rare earth hexaborides and derivation of equations for the equilibrium constants (K_p) of the reactions. Orig. art. has: 3 figures, 4 tables, 4 formulas.

SUB CODE: 07/ SUBM DATE: 09Apr65/ ORIG REF: 011/ OTH REF: 001

Card 2/2

L 13101-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG

ACC NR: AP5025799 SOURCE CODE: UR/0363/65/001/009/1593/1597

AUTHOR: Portnoy, K. I.; Timofeyeva, N. I.

33
B

ORG: none

TITLE: Synthesis and properties of rare earth chromites

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 9, 1965, 1593-1597

TOPIC TAGS: rare earth, chromium compound, lutetium, lanthanum

ABSTRACT: The methods of synthesizing rare earth chromites were tested, and certain chromite physicochemical properties of practical interest were studied. Two methods were employed: synthesis by high temperature roasting of rare earth oxides and decomposition of volatile binary salts of chromium and of the rare earth element. It was found that thermal decomposition of nitrates in air at 1100-1200°K produces chromites of all the rare earth elements from lanthanum to lutetium. An exception is cerium chromite, the synthesis of which requires a reductive atmosphere. It is shown that all the chromites synthesized are refractory compounds

UDC: 546.65'763

Card 1/2

L 13101-66

ACC NR: AP5025799 O

of rare earth elements and display a much greater stability toward boiling water and chemical reagents (acids, alkalis, oxidants) than the sesquioxides. Orig. art. has: 3 tables.

SUB CODE: 07/ SUBM DATE: 09Apr65/ ORIG REF: 003/ OTH REF: 006

Card 2/2

L 13100-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG

ACC NR: AP5025800 SOURCE CODE: UR/0363/65/001/009/1598/1601

AUTHOR: Portnoy, K. I.; Timofeyeva, N. I.

25
B

ORG: none

TITLE: Synthesis and properties of rare earth monoaluminates

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 9, 1965, 1598-1601

TOPIC TAGS: aluminate, lanthanum compound, praseodymium compound, neodymium compound, samarium compound, europium compound, gadolinium compound, dysprosium compound, rare earth element

ABSTRACT: Monoaluminates (prepared on the basis of the thermal decomposition of nitrates) of lanthanum, praseodymium, neodymium, samarium, and europium at 1200°K, and monoaluminates of gadolinium and dysprosium at 1650°K were studied. Compounds obtained at 1200°K had a perovskite structure, as determined by x ray analysis, and elements with atomic numbers 64 to 71 formed compounds amorphous to x rays under these conditions. Cerium aluminate could not be obtained by roasting in air owing to the instability of cerium aluminate in an oxidizing medium. Chemical stability of the monoaluminates was studied in various acids, and

UDC: 546.65'623

Card 1/2

L 13100-66

ACC NR: AP5025800

found to increase with the roasting temperature: monoaluminates fired at 2000°K were very stable to mineral acids and alkalis, and their dissolution (for analytical purposes) required fusion with bisulfate. The aluminates were practically insoluble in water. Melting points were determined in argon with an optical pyrometer within ±50°. Orig. art. has: 3 tables.

SUB CODE: 07/ SUBM DATE: 09Apr65/ ORIG REF: 006/ OTH REF: 003

Card 2/2

L 10422-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG

ACC NR: AP6000286 SOURCE CODE: UR/0078/65/010/009/2041/2043

AUTHOR: Portnoy, K.I.; Timofeyeva, N.I.; Fadeyeva, V.I.

ORG: None

TITLE: Reactions of rare earth oxides with chromium

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 9, 1965, 2041-2043

TOPIC TAGS: chromium compound, europium compound, samarium compound, inorganic oxide, powder metal, sintering, phase diagram, metal analysis, rare earth element, redox reaction

ABSTRACT: Powdered Sm_2O_3-Cr_2O_3 and Eu_2O_3-Cr_2O_3 mixtures with various ratios of the components were pressed and sintered at 1073, 1273, 1473, and 1573K, and the products were studied by chemical and x-ray analyses. Phase diagrams of the two systems were plotted. The compound formed by Eu_2O_3 and Sm_2O_3 with chromic oxide has a rhombic structure with parameters $\underline{a}$ = 5.38 Å, $\underline{b}$ = 5.51 Å, $\underline{c}$ = 7.64 Å for $SmCrO_3$, and $\underline{a}$ = 5.30 Å, $\underline{b}$ = 5.52 Å, and $\underline{c}$ = 7.60 Å for $EuCrO_3$. Also studied were the systems Cr-Sm_2O_3 (Eu_2O_3). The $SmCrO_3$ phase was formed under all conditions by the reaction of chromium metal with samarium oxide. The chromite content in samples sintered in hydrogen increases with the temperature and is independent of the composition of the mixture, probably because the formation of the chromite via reduction of Sm_2O_3 is much slower than the reaction of

UDC: 546.659-31+546.763-31+546.763'659-31

Card 1/2

L 10442-66

ACC NR: AP6000286

chromic oxide with samarium oxide. In the case of europium oxide reacting with chromium, europium chromite also was formed. Orig. art. has: 3 figures and 1 table.

SUB CODE: 07 / SUBM DATE: 01Jan64 / OTH REF: 003

Card 2/2

L 13829-66 EWP(e)/EWT(m)/EWP(w)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/HW

ACC NR: AP5030023 (A) SOURCE CODE: UR/0020/66/169/005/1104/1106

AUTHOR: Portnoy, K. I.; Chubarov, V. M.; Romashov, V. M.; Levinskaya, M. Kh.; Salibekov, S. Ye.

42
41
B

ORG: none

TITLE: Phase diagram of the nickel-boron system

SOURCE: AN SSSR. Doklady, v. 169, no. 5, 1966, 1104-1106

TOPIC TAGS: nickel boron system, nickel boron alloy, alloy phase diagram, alloy phase composition, alloy structure, intermetallic compound

ABSTRACT: A phase diagram of the Ni-B system (Fig. 1) has been plotted on the basis of data obtained by physicochemical analyses of a series Ni-B alloys, containing 0 to 100% B, compacted and sintered from the powders of 99.7% carbonyl nickel and 99.4% boron. In alloys with up to 50 at% B, the existence of Ni_3B (orthorhombic), Ni_2B (tetragonal), Ni_4B_3 (monoclinic) and NiB (orthorhombic) compounds was confirmed. In alloys with 50—70 at% B, a new phase containing approximately 92 at% B with

Card 1/2 UDC: 546.3-19'74'27

L 43829-66

ACC NR: AP6030023

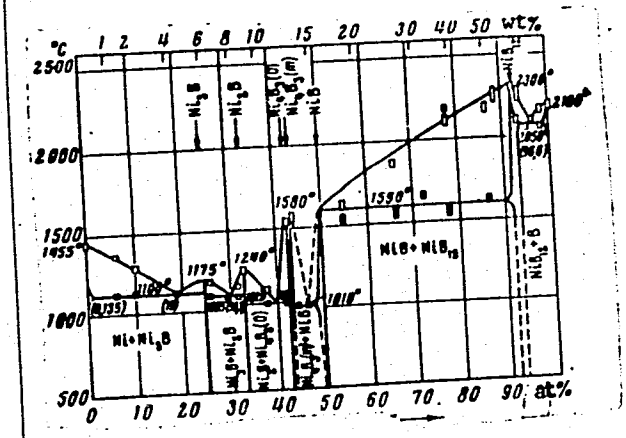


Fig. 1. Phase diagram of the Ni-B system.

a cubic crystal lattice (a = 7.377 ± 0.005 kx) and NiB_{12} stoichiometric composition was found. The microhardness of this phase was found to be 2900 kg/mm^2; it has a melting point of 2320C. Orig. art. has: 3 figures and 1 table. [WW]

SUB CODE: 11/ SUBM DATE: 08Dec65/ ORIG REF: 002/ OTH REF: 008

ATD PRESS: 5072

Card 2/2 fv

PORTNOY, L.

Group magnetization of magnetic separators. Muk.-elev.prom.21 no.9:28-29 S '55. (MIRA 8:12)

1. Voronezhskoye zavodoupravleniye no.1.
(Separators (Mechines))

PORTNOY, L., inzh.

Fixed dust-controlling installation for grain elevator silos.
Muk.-elev.prom. 25 no.9:22 S '59. (MIRA 12:12)

1. Voronezhskoye zavodoupravleniye No.1.
(Grain elevators--Equipment and supplies)

PORTNOY, L.M., MINDLIN, S.S.

X-ray diagnosis of a tumorlike form of tuberculosis of the small intestine. Vest. rent. i rad. 40 no.2:64-67 Mr-Ap '65. (MIRA 18:6)

1. Nauchno-issledovatel'skiy institut rentgenologii, radiologii i onkologii Ministerstva zdravookhraneniya RSFSR, Rostov-na-Donu.

FORTNOY, L.M.

Study of the motor function of the gall bladder after stomach resection in cancer and peptic ulcer. Vest. rent. i rad. 35 no. 5:30-33 S-O '60. (MIRA 13:12)

1. Iz rentgenologicheskogo otdeleniya (rukovoditel' - dotsent Ya.M. Khan) Rostovskogo nauchno-issledovatel'skogo instituta rentgenologii, radiologii i onkologii Ministerstva zdravookhraneniya RSFSR (dir. P.N. Snegirev).

(GALL BLADDER) (STOMACH—SURGERY)

PORTNOY, L.M.; ORLOVSKAYA, L.A.

X-ray observations on the dynamics of changes in pulmonary lymphogranulomatosis during chemotherapy. Vop. onk. 11 no.7:82-88 '65. (MIRA 18:9)

1. Iz Rostovskogo-na-Donu gosudarstvennogo nauchno-issledovatel'skogo instituta rentgenologii, radiologii i onkologii (dir.- kand. med. nauk A.K. Pankov).

PORTNOY, L.M., kand. med. nauk

Differential X-ray diagnosis of the prolapse of gastric mucosa and of gastric polyps prolapsing into the duodenal bulb. Vest. rent. i rad. 39 no.3:30-33 My-Je '64. (MIRA 18:11)

1. Rostovskiy nauchno-issledovatel'skiy institut rentgenologii, radiologii i onkologii.

PORTNOY, L.M.

Significance of cholecystography in the diagnosis of dyskinesia of the gall bladder in chronic appendicitis. Khirurgiia 36 no.4:69-72 Ap '60. (MIRA 13:12)
(GALL BLADDER--RADIOGRAPHY) (APPENDICITIS)

PORTNOY, L.M.

Study of motor functions of the gall bladder with the aid of cholecystography in patients with gastric cancer. Vop.onk. 5 no.10:432-438 '59. (MIRA 13:12)
(STOMACH--CANCER) (GALL BLADDER--RADIOGRAPHY)

PORTNOY, L.M.

Sarcoma of the small intestine. Vest.rent.i rad. 34 no.5:79 S-O '59.
(MIRA 13:3)

1. Iz rentgenologicheskogo otdeleniya (rukovoditel' - dots. Ya.M. Khan) Rostovskogo-na-Donu nauchno-issledovatel'skogo instituta rentgenologii, radiologii i onkologii (dir. P.N. Snegirev) Ministerstva zdravookhraneniya RSFSR.
(INTESTINE SMALL neoplasms)
(SARCOMA case reports)

PORTNOY, L.M.; ROZINOV, Ya.G.

X-ray diagnosis of bronchial adenoma. Vest. rent. i rad. 40 no.3:54-56 My-Je '65. (MIRA 18:7)

1. Rostovskiy-na-Donu oblastnoy legochno-khirurgicheskiy sanatoriy, Novocherkassk.

PORTNOY, L.M., kand. med. nauk; DELCHEV, P.I.

Bronchography under intravenous anesthesia using a double intubation tube. Vest. khir. no. 6:19-23 '65. (MIRA 18:12)

1. Iz Rostovskogo oblastnogo legochno-khirurgicheskogo sanatoriya (glavnyy vrach - zasluzhennyy vrach RSFSR Ya.G. Rozinov).

PORTNOY, L. M., CAND MED SCI, "MOTOR FUNCTION OF THE GALLBLADDER UNDER CERTAIN PATHOLOGICAL CONDITIONS OF THE DIGESTIVE ORGANS." MOSCOW, 1961. (STATE SCI RES ROENT-GENO-RADIOLOGICAL INST, MIN OF HEALTH RSFSR). (KL-DV, 11-61, 229).

PAIATSYK, V. V.; PORTNOY, L. R.

Vegetable Gardening

Increase in collective farm vegetable gardening; Sad i og. no. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, May 1952. Uncl.

12

L 55233-65 EWT(d)/EWA(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) Pf-4
ACCESSION NR: AP5015545 UR/0286/65/000/008/0084/0084

AUTHOR: Portnoy, L. S.

TITLE: Phase system of programmed control. Class 49, No. 170261

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 84

TOPIC TAGS: control equipment, lathe 14

ABSTRACT: This Author Certificate presents a phase system of programmed control 14 of the position and motion of the operating unit of a metal cutting lathe. The input information is in the form of a phase shift between two periodic signals recorded on magnetic tape. To exclude the effect of variations in the tape speed and of misalignment, two phase discriminators are used for separating the error signal. A switching circuit is also used to insure continuous operation of the discriminators on the monotone portions of their characteristics by feeding to them one of the two reference signals shifted in phase by 180°.

ASSOCIATION: none

SUBMITTED: 30May63 ENCL: 00 SUB CODE: EC, IE

NO REF SOV: 000 OTHER: 000

Card 1/1

VLADIMIROV, L.P.; PORTNOY, L.Ya.

Thermodynamic analysis of the desulfuration reaction during the blowing of cast iron with gases. Izv. vys. ucheb. zav.; chern. met. 7 no.9:29-34 '64. (MIRA 17:6)

1. Kommunarskiy gornometallurgicheskiy institut.

PIVEN', D.S.; PORTNOY, L.Ya.; LOGINOV, V.P.; UGRYUMOV, I.V.

Incubation of duck eggs on our state farm. Ptitsevodstvo 9 no.10:18-20 O '59. (MIRA 13:2)

1. Direktor ptitsesovkhoza "Yasnaya Plyana", Stavropol'skogo kraya (for Piven'). 2. Glavnyy zootekhnik ptitsesovkhoza "Yasnaya Polyana," Stavropol'skogo kraya (for Portnoy). 3. Glavnyy vetvrach ptitsesovkhoza "Yasnaya Polyana", Stavropol'skogo kraya (for Loginov). 4. Zaveduyushchiy inkubatororiyem ptitsesovkhoza "Yasnaya Polyana," Stavropol'skogo kraya (for Ugryumov).

(Incubation) (Ducks)

Portnoy L. Ya.

ONOPRIYENKO, V.N., kand.tekhn.nauk; STARSHINOV, B.N., kand.tekhn.nauk; STARSHINOV, B.N., kand.tekhn.nauk; TKACHENKO, A.A., inzh; SINITSKIY, V.D., inzh.; FREYDIN, L.M., inzh.; PORTNOY, L.Ya., inzh.

Operations of the blast furnace no.3 at the Voroshilov Plant using fluxed IUGOK sinter. Biul.TSNIICHM no.17:1-6 (325) '57. (MIRA 11:4)

(Blast furnaces)

PORTNOY, M. G.

PA 196T50

USSR/Electricity - Generators
Synchronization

Sep 51

"A Frequency-Difference Relay of the Induction Type for Synchronization of Generators," M. G. Portnoy, Engr, Yu. M. El'kind, TsNIEL (Cen Sci Res Elec Eng Lab), Min of Elec Power Stations USSR

"Elektrichestvo" No 9, pp 58-63

Gives operating requirements for a frequency-difference relay for automatic paralleling of generators. A frequency-difference relay (type

196T50

USSR/Electricity - Generators (Contd)

Sep 51

IRCh) was developed in the TsNIEL. Describes the relay, gives the eq governing its operation, and presents amplitude characteristics and results of tests. Submitted 27 Feb 51.

196T50

PORTNOY, M.G., inzhener.

Control and restoration of selenium plates in compounding units with an electromagnetic corrector. Elek.sta. 25 no.2:56 F '54.
(MLRA 7:2)
(Electric controllers)

PORTNOY, M.G., inzhener; KHOMUTOV, B.A., inzhener.

Testing the self-starting of electric motors for internal use.
Elek.sta. 25 no.11:36-38 N '54. (MLRA 7:11)
(Electric motors--Starting devices)

FORTNOY, M.G., inzhener.

Protection of phanerno-polar synchronous generators from excitation losses. Elek. sta. 28 no.6:82-83 Je '57. (MIRA 10:8)
(Electric generators)